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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1943.

No. 262

THE GOODYEAR TIRE & RUBBER COMPANY, INC.
and
GENERAL DRY BATTERIES, INC.,
Petitioners,

vs.

RAY-O-VAC COMPANY,
Respondent.

BRIEF FOR RESPONDENT ON WRIT OF CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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SUBJECT-MATTER INDEX.

	PAGE
Summary of Argument	iii
Opinions Below	1
Jurisdiction	2
The Questions Presented	2
Argument	3
Statement of Facts	3
The Dry-Cell Battery Industry	4
The Long-Felt Want	5
The Ray-O-Vac Leak-Proof Cell	7
Satisfying the Long-Felt Want	10
The Determinations Below Are Findings of Fact Which Should Not Be Disturbed	14
Tests of Invention	17
Infringement	23
Prior Art and Practice	30
That the Claims in Suit Were Treated as Generic by the Patent Office Is Clear from the File Wrapper	36
Findings of Fact	40
Conclusion	41
Appendix	43
Excerpts from the Report of the National Patent Planning Commission	43
Introduction	43
Patents and the War Effort	44
Uniform Standard of Invention	45
Sheet 1, Colored Chart Illustrating Accused Cell and Figure 1 of the Patent	
Sheet 2, Colored Chart Illustrating Various Figures in the Patent in Suit and Ray-O-Vac's Commercial Cell.	

Table of Cases.

Adamson v. Gilliland, 242 U. S. 350, 353 41

Barbed Wire Patent Case, 143 U. S. 275 20

Bell Telephone Case, 126 U. S. 19

Broome v. Hardie-Tynes Manufacturing Co., 92 F. 2d 886 3

Carnegie v. Cambria, 185 U. S. 403, 429 20

Charleston, South Carolina Mining & Mfg. Co. v. United States, 273 U. S. 220, 223 41

Contl. Paper Bag Co. v. Eastern Paper Bag Co., 210 U. S. 406, 416 41

Cuno Engineering Corp v. Automatic Devices Corp., 314 U. S. 84, 94; 86 L. Ed. 58, 64 21

Diamond Rubber Company v. Consolidated Tire Company, 220 U. S. 428 ..... 12, 19

Hotchkiss v. Greenwood, 11 How. 248; 52 U. S. 248, 267 17

Krementz v. Cottle, 148 U. S. 556 21

Paramount v. Tri-Ergon, 294 U. S. 464, 474 21

Radio Corporation v. Radio Laboratories, 293 U. S. 1, 7 (1934) 15

Sanitary Refrigerator Co. v. Winters, 280 U. S. 30, 42 ..... 12, 29

Sanitary Refrig'r Co. v. Winters, 280 U. S. 30, 42 ... 12, 29

Smith v. Goodyear Dental Vulcanite Company, 93 U. S. 486 20

Smith v. Snow, 294 U. S. 1 ..... 21, 40

Williams Company v. United Shoe Mach. Corp., 316 U. S. 364 (1941) 15, 41

Statutes.

28 U. S. C. A., Section 347 2

35 U. S. C. A., Section 68 3

Summary of Argument.

The invention of the Anthony patent in suit has the unusual distinction of being the first to satisfy an old and generally recognized want in the battery industry.

The dry battery industry is over sixty years old and is now well developed and highly competitive. The present invention is concerned with flash light dry-cells. Although some 300,000,000 were sold during 1941, flash light dry-cells comprise but a small percentage of the industry's entire dry-cell output.

Two problems that have plagued the flash light battery industry from its inception are leakage of electrolyte from defective cells and swelling of exhausted cells to the point of destroying the instrument in which they are used. Petitioners have conceded that leakage has been, for a long time, a generally recognized problem. Intelligent people in practically every walk of life are aware of the problem but no one was able to produce a satisfactory dry-cell that overcame these objections until Anthony made the invention of the patent in suit.

The invention was promptly made available to the public by Ray-O-Vac and the leak-proof cell was guaranteed against leaking or swelling. The cell was also found to have the unexpected advantage of greatly improved electrical performance and long shelf life. Sales more than doubled each year from over 700,000 in 1939 to a rate of 70,000,000 a year at the time of the trial. After careful competitive tests, the cell was approved by the U. S. Army Signal Corps which took 45% of Ray-O-Vac's output in 1941. Ray-O-Vac has promptly filled every order from the armed services.

This case comes before this Court on an unblemished record wherein a valid patent was issued by the Patent Office with the best prior art cited. The District Court found facts, unanimously concurred in by the Circuit Court of Appeals, which established validity and infringement under established principles of law.

The patented invention appears simple, mechanically, but it easily passes the difficult tests for patentable invention. Mechanical simplicity has never defeated an invention which solved old problems or unexpectedly produced a remarkably improved product. History proves, by the long-felt want and subsequent commercial success, that the invention was not obvious.

Infringement is clear by reference to the folded charts in the appendix hereto. The claims are not limited to any particular type of top or bottom closure and the drawings in the patent, as in any mechanical patent, are merely illustrative. Respondents with full knowledge of the patent and Ray-O-Vac's commercial success deliberately infringed with the accused cells.

Not one of the prior art references shows a metal jacket for a dry-cell intended or adapted to perform the functions of the novel metal jacket of the patent in suit.

The file wrapper of the patent contains no indication or argument that the claims in suit are of narrower scope than now contended for by respondents.

Practically all of the factual issues are covered by the findings of fact in the District Court, and petitioners do not deny that the findings are amply supported by the record.

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BRIEF FOR RESPONDENT ON WRIT OF CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

To the Honorable Chief Justice and Associate Justices of the Supreme Court of the United States:

OPINIONS BELOW.

The opinion of the District Court (R. 126) is reported in 45 F. S. 927, and the opinion of the Circuit Court of Appeals is reported in 136 Fed. (2d) 159.. The findings of fact and conclusions of law are on pages 136-139 of the record.

JURISDICTION.

The judgment of the District Court declaring the patent in suit valid and infringed was entered July 22, 1942 (R. 140), and was affirmed by the Circuit Court of Appeals on June 5, 1943 (R. 247). The writ of certiorari was granted October 18, 1943. The jurisdiction of this court is conferred by Section 240 (a) of the Judicial Code as amended by the Act of February 13, 1925, 28 U. S. C. A., Sec. 347.

THE QUESTIONS PRESENTED.

(1) Is Ray-O-Vac Company's patent for a leak-proof dry-cell for a flashlight battery (Anthony Patent No. 2,198,423) valid?

(2) Has the patent been infringed by petitioners, The Goodyear Tire and Rubber Company, Inc., and General Dry Batteries, Inc.?

ARGUMENT.

Statement of Facts.

Ray-O-Vac Company, a battery manufacturer with principal offices in Madison, Wisconsin, brought suit in the District Court for the Eastern District of Illinois, charging petitioners with infringing its patent on a leak-proof dry cell for a flashlight battery. The Goodyear Tire and Rubber Company Inc. retailed the accused cells which General Dry Batteries, Inc. made for it under the Goodyear label. The patent was held valid and infringed by the District Court, and the judgment of the District Court was affirmed by the Circuit Court of Appeals for the 7th Circuit.*

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*Page 1 of petitioners' brief suggests that they are greatly concerned by the scope of the injunction granted by the District Court. It is clear that petitioners are not restrained from making the infringing cell for the government. 35 U. S. C. A. Sec. 68; *Broome* v. *Hardie-Tynes Manufacturing Co.*, 92 Fed. (2) 886. See also excerpts from report of Natl. Patent Planning Commission, in appendix hereto. At the time of the trial General Dry Batteries' cell had not been approved by the Signal Corps (R. 77), and even on September 22, 1942, after the injunction, petitioners' counsel wrote to respondent's counsel that General Dry Batteries "do not now have any government orders for these cells nor are they seeking any at the present time." By telephone and a letter dated July 30, 1942, respondent's counsel advised petitioners that he did not consider the injunction prevented defendants from filling government orders.

A few passing remarks and this reference to alleged interference with sales to government are all that remain of the broad and unfounded assertions advanced in the petition for certiorari with respect to the importance of this case to the successful prosecution of the war. It is significant that petitioners have abandoned their claims in this regard—claims which they never could have established on or off the record—now that they are before the court.

The only issues are validity and infringement of the patent. There have been no licenses under the patent, nor attempted price control or other restrictions. Production has not been curtailed. There is no problem of patent pooling, cartelization or restraint of trade in either the patented product or related material; nor has there been any failure to make the invention available to the public. Ray-O-Vac Company has not tried to expand its control of the patented dry-cell or to control any of the materials used in making it.

The uncontroverted facts demonstrate that the validity of the patent rests upon fundamental and traditional principles of patent law. The invention has the unusual distinction of satisfying an old and generally recognized want in a well developed and highly competitive industry. The invention ran counter to the teachings of the prior art in that, for the first time, it provided means for confining internal pressure of a flashlight dry cell in a manner to prevent swelling of the casing and leakage of corrosive electrolyte. At the same time it unexpectedly provided a flashlight cell of greatly improved electrical performance and longer "shelf life". The invention was promptly made available to the public and enthusiastically received.

The Dry Cell Battery Industry.

The dry battery industry began in this country over sixty years ago. It is now well developed and highly competitive. A number of well established companies manufacture batteries. While neither Ray-O-Vac Company nor General Dry Batteries, Inc., is the largest producer, they are both important factors in the field.

Dry batteries have numerous uses and are made in many different sizes and types to meet varying needs. They are used not only in flashlights but in portable radios, trans-

nitters, telephones, telegraph, and in weather forecasting, as well as for engine ignition and for providing electricity for hearing aids and numerous household appliances. While there were some 300,000,000 flashlight dry cells made and sold during 1941 (R. 122), flashlight dry-cells form but a small percentage of the industry's total dry-cell output.

The Long Felt Want.

As shown by flashlight dry-cell production, flashlights are used by literally millions of people in all walks of life and in nearly every endeavor. Doctors, repairmen, watchmen, soldiers, hunters, autoists, home owners, trainmen and utility representatives are among the common users. Although the needs of each group necessarily differ, all users, whether they require flashlights for emergency purposes or daily use, want a reliable flashlight ready to perform instantly on closing the switch. The dry-cell which supplies the power is the key to reliability and good performance.

The conventional dry-cell has a cylindrical zinc electrode casing, which contains a central carbon electrode, an electrolyte and a depolarizing mix. The term "dry-cell" is somewhat misleading, since the electrolyte is actually of a creamy consistency (R. 84). When a flashlight is operating and using current, the electrolyte gradually eats away the zinc container. While the cell is being used, gas is generated, certain solids grow within the cell and gas pressures develop, with the result that the cell expands and the zinc walls of the container may bulge or break, with attendant leaking of the contained liquids (R. 56). Since these liquids usually include ammonium chloride and zinc chloride, both of which are corrosive, injury to the walls of the flashlight casing results.

When leaking cells are permitted to remain in the cas-

ing for any substantial time, the flashlight parts are corroded and the continued swelling of the cell sometimes makes it impossible to extract the cell without damaging the casing (R. 51). See Plaintiffs' Exhibit 10. These problems of leakage and swelling, arising from the basic electro-chemistry of the dry cell, have existed since dry cells were first used. Battery manufacturers and flashlight users alike struggled with the problem (R. 100) and no solution was found prior to the Ray-O-Vac leak-proof cell.*

There is ample proof of the long-felt want for a leak-proof cell. On page 63 of the record, it is conceded by counsel for petitioners:

> "Mr. Chilton: We concede that leakage has been a problem for a long time.
>
> The Court: And generally recognized.
>
> Mr. Chilton: Yes, sir."

The trial court found that "the problem of swelling and leakage of dry cells, particularly used ones, has been well-known in the industry, practically from its beginning, by manufacturers and users * * *" (Finding of Fact 6, R. 136).

The importance of the leakage and swelling problems is shown by witnesses representing various categories of flashlight users. A proprietor of a hardware store, several individual users, the chief purchasing officer for a large railroad, a buyer for the Pullman Company, and a representative of a large utility company all testified to the difficulties which they had experienced as merchants

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* Petitioners say on pages 9 and 16 of their brief that the function of the metal sheath is to prevent the liquid contents of a dead cell from leaking and that the problem arises only after the cell "has gone dead". It is well known in the art that leakage can occur in fresh ordinary cells when placed under a heavy load, but swelling only takes place after a rather indefinite period of time (see petitioners' testimony (R. 100, 108), petitioners' publications, Plaintiff's Exhibit 17 (R. 64)).

or users because of cell leakage and the attendant swelling and damaging of flashlight casings (R. 19-46). The seriousness of the problem is proved by the fact that competing battery manufacturers still find it necessary to print notices on their cells warning users that exhausted cells must be removed immediately from flashlights and to take other precautions for putting the consumer on notice of the damage which may be expected from swelling and leakage (Pltfs. Exhibit 12, R. 53).

Cyril P. Diebel, President and Treasurer of petitioner General Dry Batteries, Inc., testified that "leakage has been with us for a long time" (R. 110), and acknowledged that the problems of leakage and swelling were a "bugaboo" that his company was trying to correct (R. 113). In fact, while respondent's application for the patent in suit was pending, petitioner itself published a folder discussing the oozing of electrolyte from dry cells (Pltfs. Exhibit 17, R. 64). When Ray-O-Vac offered to show that the problem had been discussed in textbooks and technical literature for more than forty years, counsel for petitioners made this unnecessary by stipulation (R. 62).

The Ray-O-Vac Leak-Proof Cell.

Notwithstanding the universal recognition of the leakage and swelling problem and the ready availability of all the tools and materials now shown to be needed for its solution, no one was able to produce a satisfactory dry cell that overcame these objections until the patent application, which led to the manufacture of the Ray-O-Vac leak-proof cell, was filed by Herman Anthony. His invention in 1938 provided the first, and to date the only, practical solution of these problems.

A detailed review of the prior art is postponed until later in this brief (see *infra*, p. 30). It is pertinent to

note at this juncture, however, that while several earlier inventors had sought by various means to deal with the problem of leakage and swelling, no one had suggested the idea disclosed in the Anthony patent. In fact, the prior art shows that the earlier inventors sought to meet the problem of leakage and swelling either by attempting to permit leakage in a manner which would not be damaging or by attempting to absorb the electrolyte when leakage took place.

Anthony adopted a wholly different approach. His dry cell avoids leakage and swelling by confining the internal pressure within the cell. This is done by applying a steel jacket to the conventional cell and crimping this steel jacket tightly over the end closures. The steel jacket is insulated from the rest of the cell by yielding, non-conducting material. As the zinc wall expands under pressure, the insulating material and closures are tightly gripped by the jacket and leakage of electrolyte prevented. Even after the electrolyte has eaten a hole through the zinc wall, no leakage occurs and the cell may still have some useful life. Anthony, in other words, was the first to tackle the leakage and swelling problem by providing, in the form of an insulated steel jacket with tight end closures, a means for preventing the expansion and withstanding the pressures which would otherwise result in leakage.

Anthony, a man of forty-five years of age, is a mechanical engineer by profession, graduating from the University of Wisconsin with the degree of Bachelor of Science in 1924. He was employed as development engineer for the Rex-O-Vac Company, and for fifteen years preceding his invention had acted as consulting engineer for various organizations (R. 75).

Like many other inventions of genuine merit, the Anthony invention, after being made, appears simple. How-

ever, no one before Anthony realized that it would be commercially feasible to make an outer casing strong enough to confine and withstand the sudden internal pressures of the cell. Anthony's approach was both novel and imaginative. It enabled him to succeed where all others had failed. One can only conjecture as to why the idea did not occur to others earlier. Perhaps it was the belief that a steel casing could not constrain the gas pressure and expanding solids; or perhaps over the years the industry had developed a blind spot which led to a failure to reexamine basic premises. Whatever may have been the reason, Anthony's idea was novel and its results outstanding.

The patented leak-proof construction not only solved what Judge Lindley called the "bete noir of battery manufacturers and the bane of consumers—leakage resulting from corrosion and swelling of the cell", but also gave the cell a markedly improved "shelf life" (R. 128, 137). The latter was an important feature which had not been anticipated by the inventor. The term "shelf life" indicates the time during which a dry cell either when completely idle or when used only intermittently, will retain its effectiveness (R. 64). Since many flashlights are used only in emergencies, or at long intervals, "shelf life" is very important. Manufacturers, too, want the longest possible "shelf life" to facilitate merchandising and to enable dealers to stock inventories.

Much research and effort have been given to electrical performance and the "shelf life" problem during the growth of the industry.

Tests performed by the United States Bureau of Standards (R. 63), show that the Ray-O-Vac leak-proof cell has a longer "shelf life" and better electrical performance than even comparable cells which use larger quantities of zinc and electrolyte with the same mix formula. These

tests also show that the improved performance of the Ray-O-Vac cell is present both in old cells and fresh cells, while other tests (R. 61) prove that the Ray-O-Vac leak-proof cell out-performs by 46% the average of the six leading competitive cells. This better performance and longer "shelf life", while unexpected, is of great importance and gave added value to the invention.

Satisfying the Long Felt Want.

The phenomenal commercial success of the Ray-O-Vac leak-proof cell demonstrates the importance of the invention in satisfying a long felt want. This success is demonstrated not only by the attitude and testimony of important users, but by the large number of cells sold first for commercial and later military purposes.

Typical of the testimony of consumers was that of a buyer for the Pullman Company (R. 34), who, after explaining that the Pullman Company provides an emergency flashlight as part of the equipment in each of its 11,000 Pullman cars, stated that the difficulty which had previously been experienced with leakage and swelling, no longer developed when Ray-O-Vac leak-proof cells were used. This witness said that the Ray-O-Vac leak-proof cell was adopted by the Pullman Company after extensive engineering tests of various manufacturers' cells. Although the cells used by the Pullman Company are subject to considerable abuse by vibration and substantial temperature variations, experience has demonstrated that the Ray-O-Vac leak-proof cells solved the prior difficulty and were not subject to leaking or swelling. After six months of riding in a car, when the cells are taken out and replaced, they can still be used by inspectors and service men in flashlights as satisfactorily as brand new cells (R. 38).

Similarly, a representative of The Peoples Gas Light

and Coke Company (R. 40), a utility which uses between 80,000 and 100,000 cells a year, testified that his company had adopted the Ray-O-Vac leak-proof cell after testing a large number of cells. Only the Ray-O-Vac cell did not leak. Since adopting the cell, the company has never had to avail itself of the replacement guaranty and has found that the cells "have been very satisfactory" (R. 43). Similar testimony was given by other typical users.

An even more striking measure of the commercial success of the Ray-O-Vac leak-proof cell may be found in a brief review of sales following its commercial introduction in the latter part of 1939 (See Plffs. Exhibit 24, R. 121, 79). Because of the high cost of manufacture, the Ray-O-Vac cell was first offered to the public at the retail price of two for 25¢ (R., 79). Notwithstanding this relatively high price, its advantages and the manufacturer's guaranty against damage to a flashlight, led to sales of 733,018 cells during the first few months (R. 78). By January 1940 improved manufacturing methods, with increasing volume, resulted in savings that were immediately passed on to the public by reducing the retail price of the Ray-O-Vac leak-proof cell to 10¢, the regular price of the best grade cells of this size. Following this the new Ray-O-Vac leak-proof cell quickly replaced most of the company's metal top cells. The sales by Ray-O-Vac of *leak-proof* cells, for the years indicated were as follows (R. 78, 79):

Year	Number
1939	733,018
1940	12,629,678
1941	33,362,273
1942 (First 4 mos.)	23,636,773

Petitioners suggest that this phenomenal growth in the period of four years from a rate of approximately 733,000 to a rate of 70,000,000 was simply the result of extensive advertising and good merchandising. The only change in

merchandising was to guarantee the cell. This simply brought to the attention of the public the value of the invention embodied in the cell. While the expenditures for advertising increased slightly during the period, the amounts for 1940 and 1941 were less than for many earlier years (Plaintiffs' Exhibit No. 26, R. 123). As this Court said in the *Grant Tire* case, 220 U. S. 428, 442:

> "We can understand that some advertising was necessary to bring it into notice, and give it a certain use, but the extensive use which it attained, and more certainly the exclusive use which it attained, could only have been the result of its essential excellence, indeed, its pronounced superiority over all other forms."

The trial court found that "This enormous increase in sales was the result of the advantages of the leak-proof construction and not the result of excessive advertising or sales effort." (Finding of Fact No. 9, R. 136, 137.)*

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* Petitioners urge on pages 24, 26 and 45, that Ray-O-Vac's commercial cell has no gas space in the top region of the cell, as shown in all three of the Anthony patent illustrations, and that the patented invention has never been used commercially. This is obviously untrue for an examination of a section of a fresh Ray-O-Vac leak-proof cell will show the gas space. See illustration of Ray-O-Vac's commercial cell on Sheet 2 of the appendix hereto. Ramsey testified that the air space is common to all designs of cells (R. 57). Such space (usually about 7/32 of an inch) must be provided to permit expansion of the solids as the cell is used up.

It is elementary that the scope of a patent is determined by its claims, and a commercial device does not have to be an exact picture copy of the patent drawings to constitute an infringement. *Sanitary Refrig'r Co.* v. *Winters*, 280 U. S. 30, 42. Patent drawings are merely for illustration, and the Anthony patent itself, at the end of the specification, page 2, col. 2, lines 1-5 (R. 164), has the usual statement:

> "The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for modifications will be obvious to those skilled in the art."

It is significant, in this connection, moreover, that although battery sales increased substantially during this period for the whole industry going from an estimated 181,000,000 flashlight dry-cells in 1939 to 300,000,000 in 1941, Ray-O-Vac Company substantially improved its relative position in the industry after introducing the leak-proof cell so that from 1940 to 1941 alone sales under its label rose from 6.5% to 10% of all the flashlight cells sold in the United States (See Plffs.' Exhibit 25, R. 122, 80).*

Petitioners seek to minimize the commercial success of the Ray-O-Vac leak-proof cell, because part of the sales were to the United States Army Signal Corps. The facts show the fallacy of this effort. The sharp increase in Ray-O-Vac sales was well under way before the cell was accepted by the Army. Indeed, even in calendar year 1941 sales to the Army accounted for but 45% of its leak-proof sales. (Clardy's testimony (R. 70, 71) was on orders for years figured from July 1st rather than January 1st.)

Even more important, as bearing on the value of the invention, is the fact that Ray-O-Vac's large sales to the Signal Corps were subject to rigid and competitive tests. This is a further tribute to the quality and character of the Anthony invention. When the Signal Corps learned of the Ray-O-Vac leak-proof cell, it called for samples and made its own exhaustive comparisons with competitive cells before placing orders (R. 62). The Ray-O-Vac leak-proof cell was the only one that met the Signal Corps' specifications for leak-proof cells (R. 77).

The value of the Ray-O-Vac leak-proof cell to the Army

* "Electrical Merchandizing," which by stipulation was used as the basis for the figures given, indicates that since the trial Ray-O-Vac's position has continued to improve. While industry sales of flashlight dry-cells increased in 1942 over 1941 by only 22,500,000, Ray-O-Vac's sales jumped from 47,378,637 to 76,135,727 cells.

Signal Corps is shown by the letter to Ray-O-Vac from Colonel Clark (R. 73):

> "The U. S. Army requires a leak proof cell and none other for the following reason: Ten cents worth of batteries will destroy a $150 switchboard in just about twenty-four hours, which makes it evident that there is no conservation in this but mere destruction at the battle front, where the loss of communications due to leaking batteries can be least endured.
>
> Very truly yours,
>
> (Signed) THOMAS L. CLARK,
> *Lt. Colonel, Signal Corps., Officer in Charge.*"

See also the orders of the War Production Board in allotting steel for use in the cells (Plaintiff's Exhibits 22 and 23, R. 75, 76). Ray-O-Vac has filled promptly every order from the armed forces, and can supply the needs of the Government for far larger quantities than have yet been ordered.

The facts show that Anthony has an original and valuable invention which solved serious problems for the government and that had confronted manufacturers and users of dry cells from the beginning of the industry, thus satisfying a long felt want.

THE DETERMINATIONS BELOW ARE FINDINGS OF FACT WHICH SHOULD NOT BE DISTURBED.

This case comes before the Court on an unblemished record which discloses first the issuance of a valid patent by the Patent Office with the best prior art cited and, next, unanimous determinations by both the District Court and the Circuit Court of Appeals that the patent in question is valid and has been infringed. The patent has been under great scrutiny and has at all times been sustained.

This Court held, in an opinion by Justice Cardozo, that "the patent regularly issued * * * is presumed to be valid until the presumption has been overcome by convincing evidence of error." *Radio Corporation* v. *Radio Laboratories*, 293 U. S. 1, 7 (1934). The presumption has a sound foundation. The Patent Office is charged by statute with the obligation of protecting the public interest and issuing patents only upon a proper showing that something new and useful has been invented. The problems of patentability are technical in nature and require a knowledge of the art as well as the exercise of specialized skill and judgment. The Patent Office personnel is peculiarly equipped to perform these functions, and has been charged with that responsibility by the Congress. That those functions were performed in this case, with due regard for the public interest, is disclosed by the fact that initially the claims were rejected; that they were subsequently narrowed; that there were numerous Patent Office actions and amendments; and of greatest importance, the closest prior art was cited by the examiner in the first action.

The rule of presumptive validity merely gives weight to findings of fact made by competent specialized personnel in a clearly administrative field.

The presumption of validity is greatly strengthened by concurrent findings of the courts below. In the District Court, Judge Lindley, a judge who possesses exceptional experience in the patent field, made findings which are definite and unequivocal both as to validity and infringement. These findings were sustained unanimously by the three Circuit Court judges and are fully supported by the evidence.

In *Williams Company* v. *United Shoe Mach. Corp.*, 316 U. S. 364 (1941), this court affirmed the decision of the Circuit Court of Appeals for the Sixth Circuit which had given

detailed consideration to the rule here discussed, and had said in 121 F. 2d 273, 277:

> "We are, therefore, obliged to give consideration to the rule that 'one otherwise an infringer who assails the validity of a patent fair upon its face bears a heavy burden of persuasion, and fails unless his evidence has more than a dubious preponderance.' • • • To the presumption of validity that attaches to a granted patent, where the most pertinent prior art has been cited against it in the patent office, there must probably now be added the force of a growing recognition of finality that is generally being accorded to administrative determinations supported by evidence, on the ground that the administrative agency is expected to have developed an expertness in its specific field beyond what may be expected from the courts wherein adjudications range the whole field of human controversies. It is true, of course, that in the most strict sense, the granting of a patent is not, except when an interference is declared, the result of an adversary proceeding, as in usual administrative determinations of agencies exercising quasi-judicial functions. Nevertheless, it wears, in the broader sense, an adversary aspect, since patent office examination protects the public against unmerited monopoly, and so the public, as represented by the examiner, is always impliedly in adversary position to the application just as it is ever a third party to an infringement suit. To the inferences in support of validity thus noted, must now be added the implication of correctness that attaches to the findings and conclusions of the District Judge who heard the testimony of the witnesses and saw the machines in operation."

Tests of Invention.

Patent law, although a creature of statute, has fortunately been permitted to develop with little legislative interference.* Its organic history is as clear as that of any branch of common law.

Even before the Statute of Monopolies the English common law courts sustained royal patents on new things, but refused to sustain them on old things. The Statute of Monopolies merely forbade further royal patents of the latter kind.

The original English patents usually covered new imports and their principal purpose was to encourage mariners to discover and import new useful products. The very word "invention" refers rather to importation than to creation.

In a system designed to encourage imports, the kind of novelty protected is immaterial. As industrial society developed and progress involved more often a creation of the mind than an encounter by a traveler, the kind of novelty to justify a patent became important. Hence, in 1851 this Court established the wise, but then revolutionary, rule that a valid patent must rest on novelty of a kind which is beyond the skill and ingenuity of "an ordinary mechanic acquainted with the business." *Hotchkiss* v. *Greenwood*, 11 How. 248; 52 U. S. 248, 267. This rule is flexible but has produced most of the complexities of modern patent law.

Inventions may be divided into two groups, a small group where the invention satisfies a long felt want, and a larger group where it does not. In the latter group, the Courts, having no other test, are forced to examine the

*The National Patent Planning Commission now recommends a statutory objective test for invention. See excerpts from report in Appendix hereto, pages 45 and 46.

patented thing and decide on more or less theoretical grounds whether it displays ingenuity exceeding that expected of the hypothetical skilled mechanic. As an aid in making this common and frequently technical inquiry, many secondary rules have been established. These declare that certain kinds of novelty, unaccompanied by a new function, are presumptively within mechanical skill and hence are not patentable. In this group, once a new function is shown, the Court still has to determine the obviousness of the thing *per se* and that inquiry is like that in a negligence case. Negligence is less care than a prudent man should exercise; invention is more ingenuity than a skilled mechanic may be expected to exercise. Both inquiries are often difficult and beset with borderline cases, but they are essentially similar.

Creative mechanical thought, and creative legal thought are so closely similar that judges of unusually great or comparatively small creative ability often tend to overrate or under-rate the ingenuity of the hypothetical skilled mechanic. Just as negligence is determined by the care exercised by the hypothetical normally careful man, rather than that exercised by an individual judge or juror, so invention is measured by the creative ability of the hypothetical mechanic who is acquainted with the business, rather than by that of any individual. The negligence test may seem easier, only because personal experience enables one to visualize normal care of a prudent man better than the skill and ingenuity of "an ordinary mechanic acquainted with the business." The test is flexible enough to allow for the advancing skill of any industry, as proven in any given case.

Most patent law precedent deals with cases in the larger group and considerable confusion is caused by the failure both of courts and counsel to distinguish clearly from the "long felt want" cases where the inquiry is far simpler.

Occasionally, as here, a device may qualify as inventive with or without a long felt want.

In the instant case the new dry-cell has standard outside dimensions to fit standard flash light cases. The extra steel sheath compels the use of a somewhat smaller dry-cell proper, which one would expect to produce measurably reduced electrical performance. Instead we find a remarkably increased performance as well as a far greater "shelf life." Such surprising new results have generally led to sustaining patents even though the mechanical changes were quite small. A typical illustration is found in *Diamond Rubber Company* v. *Consolidated Tire Company*, 220 U. S. 428. A comparison of the patent drawing, 220 U. S. 432, with Fig. 8-A of the prior art reference, 220 U. S. 438, demonstrates that the patented tire differed superficially from the art only in very trifling matters of proportion and arrangement which would have been held to be within mechanical skill, but for the unexpected and important change in operation produced by the mechanically slight modification. Numerous cases, including the *Bell Telephone case*, 126 U. S., show instances where a very slight mechanical change produced a totally disproportionate function. A study of the Bell case shows that the Reis device of the prior art would have transmitted speech if a single contact had been slightly adjusted.

The second group of inventions to be considered comprises a comparatively few, including that before the Court, which satisfy a long-felt want. In every case where the need is great enough, the time long enough, and where the means to meet the need were always at hand, any change, however simple, which meets the need is proven by time to be beyond mechanical skill. It is absurd to assert that a given thing was obvious when history proves it was not.

Hence, this Court has several times held inventive, things

which it said it was strange had not been made before; and in at least one case, the Court spoke of "the common history of important inventions, the simplicity of which seems to the ordinary observer to preclude the possibility of their involving an exercise of the inventive faculty," *Carnegie* v. *Cambria*, 185 U. S. 403, 429.

This merely recognizes the evident fact that in cases within this group things are inventive which by the usual standards applied to the larger group are seemingly not patentable.

A brief consideration of prior cases shows the complete simplicity of things which have always been held patentable if they meet an old recognized need.

In *Smith* v. *Goodyear Dental Vulcanite Company*, 93 U. S. 486, the need was an improved toothplate of light weight, easily fitted to the gums and free from interstices around the teeth. The now well-known rubber plate was held to involve a high order of invention despite the argument that the change was only in material.

In the *Barbed Wire Patent Case*, 143 U. S. 275, the need for a satisfactory wire fence was very old; various unsatisfactory thorn fences had been tried and unsuccessful barbed wire had been tried six years before the invention sued on. The patented idea was twisting barbs on one wire and locking them by a second wire twisted around its fellow, an idea so simple that this Court (283) indicated it was strange the last workers in the art had not discovered it.

In *Carnegie* v. *Cambria* the problem arose from the fact that Bessemer Convertors require charges of molten iron of quite precise composition, and the molten iron produced by blast furnaces fluctuates too much to be satisfactory. All efforts to run blast furnaces to produce iron fit for charging directly to convertors had failed. Hence the

practice was to run iron from blast furnaces into cold pigs, select suitable pigs after analysis, and remelt to make up Bessemer charges. The old problem of avoiding this remelting operation was solved by running several taps from blast furnaces into a big pool of molten iron wherein the fluctuations were leveled out by admixture. From this "dominant pool" the still molten iron to charge the Bessemer Convertor was drawn off.

In *Smith* v. *Snow*, 294 U. S. 1, although the incubator art was far from simple when considered chemically and biologically, just as the battery art is similarly complex, the idea which brought overwhelming success after years of failure was the addition of a circulating fan to stir up the air and bring it to a uniform temperature. This simple mechanical addition made it possible to raise greatly incubator capacity. Of course, it was held patentable.

In *Krementz* v. *Cottle*, 148 U. S. 556, the simple idea held patentable was swedging a collar button of a single piece of metal.

In *Paramount* v. *Tri-Ergon*, 294 U. S. 464, 474, this Court held the patent invalid for want of invention, but it clearly indicated that a different result would have been reached had the process satisfied a long-felt want. The Court distinguished at great length from the long-felt want group of cases. In *Cuno Engineering Corp.* v. *Automatic Devices Corp.*, 314 U. S. 84, 94; 86 L. Ed. 58, 64, the concurring opinion indicates that even the obvious expedient there involved, might have been patentable had it satisfied an old need.

Throughout the whole history of the invention rules, this Court has invariably followed the simple and unanswerable principle that when time proves that the ordinary mechanic, acquainted with the business, would not think of a given expedient, the Court will not deny history by asserting the contrary.

That simple proposition is alone determinative of the instant case. The findings of fact of the trial court based upon defendant's necessary concessions, conclusively bring the patent in suit within the long-felt want group. The cases within this group passed on by this Court are comparatively few, but when findings, here unassailable, bring the patent within the group, the Court should not hesitate to apply the settled and thoroughly logical rule. In a small percentage of patent cases history proves invention. The instant case is one of them.

Infringement.

The appendix to this brief has two folded charts which have been colored, for the Court's convenience, to show readily where each element of claim 1 may be found in the various embodiments of the invention. Sheet 1 illustrates how the claim applies to petitioners' infringing dry-cell and also to Fig. 1 of the patent in suit. Sheet 2 illustrates how the same claim applies to each of the cells illustrated in the patent, and to the Ray-O-Vac commercial leak-proof cell.

It is no coincidence that the accused cell so closely resembles the Ray-O-Vac leak-proof cell. Ray-O-Vac had sold millions of its leak-proof cells, and petitioners had studied the patent in suit and seen its commercial success, before they undertook their deliberate infringement. As the number of infringing cells was small, they were able to force a test of the patent in litigation with but little financial risk to themselves.*

The District Court said (Finding 12, R. 137):

> "defendant, General Dry Batteries, Inc., with full knowledge of the patent, manufactured and sold a dry cell known as 'General Protex' which is a substantial copy of the commercial Ray-O-Vac leak-proof cell and follows closely the teachings of said Anthony patent No. 2,198,423."

Claim 1 is a combination claim for an old dry-cell with a new element, and reads as follows:

> "1. A leak-immunized flash light dry cell provided with circuit terminals at opposite ends, comprising; a

* Petitioners footnote on page 30, indicating that Deibel received a patent on the accused cell, after the trial in the District Court, is immaterial to any possible issue in this case. Obviously a later patent never gives the right to infringe earlier patents. It merely gives the right to exclude others from using the patented improvement.

hollow cylindrical zinc electrode containing electrolyte; a centrally disposed carbon electrode and depolarizing-mix in said electrolyte; a bottom closure for the cell affording a terminal for one of the electrodes; a top closure for the cell provided with a terminal for the other electrode, electrically insulated from the first mentioned terminal;" (*the elements thus far recited are commonly found in ordinary flash light dry cells*) "and a protecting sheet-metal sheath insulated from both of said electrodes and enclosing the side walls of said metal electrode and tightly embracing said closures so as to prevent leakage of the electrolyte from the unit."

The last element is novel in the combination, is used in all commercial leak proof cells, and admittedly is found in defendants' cells, Plaintiff's Exhibits 28, 29 and 30.

Claim 2 is as follows:

"2. A device as specified in claim 1, in which the sheet-metal sheath is insulated from both of the electrodes by an interposed sleeve of paper which has been treated to render it moisture resistant and electrically non-conductive."

The additional feature specified in this claim is admittedly found in the accused cells (R. 104).*

Claim 3 is as follows:

"3. A device as specified in claim 1, in which the marginal end portions of the metal sheet are turned inwardly to form flanges which overlap the end closures."

An examination of the accused cells will show that Petitioners employ the identical means for gripping the end closures.

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* Petitioners say on page 30: "Claim 2 which depends from claim 1, merely adds the further limitation that the sheet metal sheath is insulated from both of the electrodes." This is untrue because claim 1 already contains that limitation. Claim 2 is limited to the particular type of insulating material used.

Although the patent is the first to disclose a leak-proof dry-cell, it does not attempt to cover any other dry-cells or even every kind of a leak-proof cell that can be made. The claims are limited to the use of a *sheet-metal* jacket which is insulated from both electrodes, encloses the side walls of the cylindrical zinc metal electrode and tightly embraces the end closures. Obviously, this patent would not be infringed if a plastic jacket were used to make a leak-proof cell or if a metal jacket were electrically connected to either of the circuit terminals. On page 12 of Petitioners' brief, they indicate a molded plastic sheath would be as good as metal. If so, they can easily avoid infringement by using it.

On the other hand, the claims are not limited to any particular type of dry-cell end closure. The claims were drafted and understood by the Patent Office to cover various types of dry-cells when combined with the novel metal jacket insulated from both terminals and tightly gripping suitable end closures so as to prevent leakage of the electrolyte. It will be noted that the claims specify that the jacket is applied so as to prevent leakage of *electrolyte* but are not concerned with gas leakage.

Petitioners' brief says on page 30 that the accused cell has a bottom structure which is "entirely different" from the bottom structure of Fig. 1 of the patent. The patent drawing shows no difference in thickness of the side wall and bottom wall of the zinc can, while in the accused cell, according to petitioners' expert, the bottom wall is made .006 or .007 of an inch thicker (R. 97). Surely this would not avoid infringement!

Ray-O-Vac, in its commercial cell, prefers to seal up the cell tightly and reinforce the bottom of the zinc can in

accordance with the teachings of Figure 8 of the patent.* As in Figure 8, the thin metal disk must be electrically connected to the bottom wall of the zinc can and insulated from the metal jacket. The disc can easily be stamped with the date of manufacture, it is stronger and therefore conserves valuable zinc, it is more attractive in appearance, and it avoids any need to polish the bottom of the zinc can (R. 81). Answering petitioners' question on page 26, it is obvious to Ray-O-Vac that this is more economical than thickening the base of the cup with valuable zinc.

Petitioners' and respondent's leak-proof cells look alike and are identical in the only novel element of the claim, *i. e.*, the application of a novel metal jacket to a conventional dry cell. Petitioners' use of Ray-O-Vac's commercial metal top does not avoid infringement because the claim only specifies a top closure "provided with a terminal for the other electrode electrically insulated from the first mentioned terminal". Thickening the bottom closure of Fig. 1 of the patent will not avoid infringement because the claim merely specifies "a bottom closure for the cell affording a terminal for one of the electrodes". Petitioners have copied the essential element of the claim and merely exercised "the mechanic's option", as the District Court expressed it (R. 135), as to the old end closures.

Petitioners say that the upper edge of their zinc cup is embedded in a rubber gasket to permit "excessive pressure to be relieved". Cyril P. Diebel, petitioner's president, testified: "We got it so that it would leak gas but not solution except in very, very severe tests" (R. 112, 113). If this is true, petitioners are squarely within the

* Petitioners state on pages 11 and 44 that Anthony "omits instructions to seal the terminal 34 to disk 33 of his Fig. 8 structure." The patent states (R. 164), page 2, column 1, lines 37-40: "It may be noted in this form that the cell is fully enclosed at both ends and internal pressure will further tighten the connection."

teachings of Figure 1 of the patent which says: "The air space 18 permits expansion of the electrolyte and the gas may slowly escape through the perforation 21" (R. 164, col. 1, lines 17-18).

It is difficult to discover from petitioners' brief their theory of non-infringement. It says on page 29, "The claim calls for two members in the top structure" but petitioners' own Appendix II properly sets out as one element (6) "a top closure for the cell provided with a terminal." When one speaks of an automobile provided with four wheel brakes, he does not mean that the brakes are not part of the automobile.

Petitioners point out minor changes in their dry-cell which they leak-proof by application of the novel metal jacket according to Anthony's teachings, but we have shown above that this does not avoid infringement.

It is argued with petitioners' Appendix I that cancelled claim 5 was broader than claim 1 in suit. Obviously this is not true. Claim 5 said "A *cup shaped* electrode containing electrolyte" and would not read on a cell like that shown in Figure 11 of the patent (R. 162). On the other hand, claim 1 in suit says "A hollow cylindrical zinc metal electrode containing electrolyte," and "a bottom closure for the cell affording a terminal for one of the electrodes." Although more words are used in this claim, it does not require that the bottom be formed integrally with the cylindrical electrode, as in the case of the cup. The claim reads on a cup, but it reads equally well on any of the other forms. We will show later from the file wrapper, Plaintiff's Exhibits 7 and 9, that claim 5 was correctly treated in the Patent Office as more specific than claim 1 and was only dropped as unnecessary, without prejudice, after allowance of claim 1 in suit.

The only other argument of non-infringement is that claim 1 allegedly calls for two bottoms while petitioners use

but one. Reference to the language of the claim and colored sheets 1 and 2 should answer this false contention. The claim says "a bottom closure for the cell affording a terminal for one of the electrodes." In each of the colored illustrations in the appendix hereto, the portion colored with purple satisfies the quoted element of the claim. In Fig. 1, it is formed integrally with the green electrode (as in petitioners' structure); in Fig. 2, it includes the bottom of the cup, and a metal plate secured to a fiber disk by a rivet; in Fig. 11, it has the metal bottom wall, formed separately but electrically connected to the green electrode. But, petitioners argue, there had to be still another bottom on the "hollow cylindrical zinc metal electrode containing electrolyte" because otherwise the electrolyte would have run out before the bottom closure could have been put on. There is no legal basis for such an argument. The claim is directed to a completed cell and the *order* in which its parts are recited is immaterial. If one is claiming a chair, he may recite the seat portion first without worrying that it will fall down before he can mention the supporting structure.

We do not know how the language of the claims could be phrased in better terms to cover the various embodiments of the invention using a metal jacket.

The most direct answer to petitioners' argument of non-infringement is in the fact that the claims in suit do not specify one particular type of bottom closure, and petitioners have copied the first one illustrated in the patent. As the District Court observed (R. 134-135): "there is no narrowed specification as to how the end closures are to be formed." • • • "Defendant cannot escape infringement by copying the essential novel element of the patent, and in doing so merely exercise the mechanic's option as to precise method of manufacture in a respect not the essential part of the invention."

In *Sanitary Refrig'r Co.* v. *Winters*, 280 U. S. 30, 42, this Court said:

> "A close copy which seeks to use the substance of the invention, and, although showing some change in form and position, uses substantially the same devices, performing precisely the same offices with no change in principle, constitutes an infringement.—*Ives* v. *Hamilton*, 92 U. S. 426, 430."

Prior Art and Practice.

Petitioners said in their brief in the Court of Appeals:

> "We are not seeking to have the three claims in suit declared invalid but merely a decision holding that the claims in suit when interpreted in view of the prior art and file history are not entitled to an interpretation sufficiently broad to cover the accused cell."

It is significant that the Anthony invention has also been patented in the Argentine, Australia, Brazil, Canada, Chile, Colombia, Mexico, and Venezuela (R. 78). A patent has not been denied in any country and no art has been produced in any of the countries to limit the claims in suit.

Petitioners rely primarily on Olaneta Patent No. 1,623,719 (R. 206), which was cited in the file wrapper of the patent in suit. It shows an outer cup-shaped container 13, which may be of metal. However, on page 2, lines 1-7, it is stated:

> "It is not, of course, essential that the outside container 13 be made of metal, as it may be made of any desired material which can be formed into the desired shape and which is economical to manufacture."

Olaneta says on page 1 that his object is to produce a *waterproof* cell so that it will not be shorted "when exposed to rain or to water which may be splashed thereon, as for instance when used in a motor boat or the like." It is a large size cell of the type used on doorbells and the like, where swellage and leakage are of less importance. It has a wax-top seal which may be softened by the internal heat generated by heavy current withdrawals (R. 56). Obviously, the purpose of the cup-shaped container, with its straight top edge, is to protect the cell from outside moisture and it is not designed nor adapted to withstand the internal gas or mechanical pressure of a small cell which would crack the wax top seal and push it out of the

free end of the container, as happened to some of the cells photographed in Plaintiff's Exhibit 21 (R. 117). The container does not have Anthony's flange or other means to grip tightly the top closure.

Petitioners pretend on page 19 that they cannot tell from the Anthony patent how thick to make the sheet metal jacket. Olaneta, or their own Deibel patent No. 2,289,249, does not tell how thick, but strangely enough petitioners' cells use the same thickness and kind of sheet metal as the first Anthony cell from which the patent drawings were made (see Plaintiff's Physical Exhibits Nos. 27 and 29, R. 82, 85).

The Patent Office cited this Olaneta patent but agreed it did not anticipate the Anthony claims.* It is not a flash-light dry cell, it does not have circuit terminals at opposite ends, the bottom closure does not afford a terminal for one of the electrodes, and most important of all, the outer sheet metal cup does not tightly embrace the top closure so as to prevent leakage of electrolyte from the unit. The District Court said (R. 130): "He evidently was not attempting to prevent leakage from within but seepage from without."

Millar patent No. 1,654,823 (R. 212), issued January 3, 1928, is of interest in showing earlier efforts to obtain some of the advantages of the present invention by using a storage battery. Millar's metal battery casing is for a different purpose, it is perforated, and it does not have Anthony's gripping "flanges which overlap the end closures". Anthony's claims specify a dry-cell combination

* On page 13 of petitioners' brief it is stated that "The decisions of the lower courts now prevent the public from using the Olaneta structure as a flash light cell." This is untrue because none of the claims in suit reads on this reference. This is also clear from appendix 4 to petitioners' brief.

which has "a hollow cylindrical zinc electrode containing electrolyte."

A storage battery does not swell like the usual dry-cell, and Millar proposes to blot up any leakage. Of course, a storage battery uses a different kind of electrolyte; does not have a depolarizing mix, and does not have expanding solids which, in a dry-cell, sometimes exert enough mechanical pressure to force off the top. See Plaintiff's Exhibit 21 (R. 117). A storage battery is not a primary source of electric power and must be charged before use. It is well known that storage batteries give off a great deal of hydrogen gas during the last stages of electrical charging, and this accounts for Millar's "screw plug 5" for the vent 3°. When a storage battery is idle or being discharged by use, there is very little hydrogen gas liberated.

Millar did not have Anthony's problems nor did he show how to solve them. It is significant that Millar proposes to use a flexible sheet rubber casing 8 which is surrounded by absorbent cotton 10x to "absorb any of the active fluid which may leak through the rubber casing 8 if it should at any time deteriorate". He provides a perforate rigid outer metal casing to secure the heads 3 and 4 with the plates 3x and 4x in necessary spaced relation, and to hold the absorbent cotton 10x. He provides an opening 10 in the side wall of the casing "so that atmospheric pressure is maintained within the space 11 intervening between the casing 9 and casing 8". There is nothing like this in Anthony.

Instead of confining the pressure to prevent leakage, Millar does the opposite. He avoids pressure by letting the rubber casing 8 expand to "accommodate" the gases, and blots up any liquid leakage with cotton. The District Court said (R. 131): "His method of solution was far afield

from what Anthony did and he disclosed no conception of Anthony's solution."

Petitioners also rely on British patent No. 438,663 (R. 237). It may be noted that in Figures 1 and 3 of the British patent, the non-metallic jacket "a" resembles somewhat the shape of Anthony's metal jacket, but the specification says: "The closure 'a' may be made of waxed or unwaxed pulp board, straw board, fiber, bentonite, synthetic resin, or other similar *insulating* material". In other words, it is not a metal jacket nor is it designed to withstand pressure.

Petitioners' brief calls attention to the fact that the top "disc b" in Figure 1 may be made of metal if given an insulating coating. This would provide a metal top but not a metal jacket. Obviously, a jacket of insulating material will not infringe the Anthony claims, if petitioners care to use one.

Petitioners also mention Armelin patent No. 1,299,813 (R. 198) which shows two ordinary dry cells arranged in tandem relation within a "paper cartridge or case." Obviously, the case "C" must be made of paper or some insulating material because a metal case would short circuit the lower cell.

Petitioners offered a so-called "Hot-Shot" battery for motor ignition of boats, tractors, and the like, as Defendants' Exhibit 7, and also a lantern battery, Defendants' Exhibit A-4. In these exhibits, a battery of several large dry-cells are nested in a single metal can with flexible closures. It is clear from the testimony that the only purposes of the metal can are to improve the appearance, provide a convenient way for carrying a group of cells, and to protect them from the weather. An examination of Defendants' Exhibit A-4 shows that any electrolyte leaking out of the cells could run out through the large holes in

the cardboard closure when the battery is inverted in a railway lantern as ordinarily used (R. 91).

Each of these batteries has large air spaces between the dry cells and the metal cases are wholly incapable of preventing cell leakage or expansion of the cells. If one of the cells leaks through its paper jacket, it may cause a short circuit with an adjacent cell. The metal case does not fit the side walls of the zinc electrode and tightly embrace the closures of the dry-cells to prevent leakage of electrolyte, as specified in the claims. The cans are not designed nor adapted to withstand any internal gas or liquid pressure (R. 91, 92).

On page 13 of petitioners' brief, the first rejection by the Examiner is quoted. Obviously, in subsequently allowing the claims in suit, the Patent Office agreed that the cited references did not meet the Anthony invention.

Petitioners' brief twice refers to Judge Evans' inadvertent comment on "guinea pig prolificacy." That dictum was based on the erroneous statement of the Court of Appeals that between 1935 and 1941 Anthony secured three patents on leak-proof dry-cells. Petitioners know that the 1935 Anthony patent (R. 216) has nothing whatever to do with leak-proof cells. It does not have a steel jacket and employs the ordinary sealing wax in the top which has long been known as ineffective to prevent swellage or leakage. The 1940 patent in suit (R. 163) is the first patent on a leak-proof cell, and the 1941 Anthony patent (R. 234) is a subsequent continuation-in-part of the patent in suit and can in no manner affect the validity of the patent in issue. Notwithstanding the dictum, the Court of Appeals held the patent valid and infringed.

The prior art shows that all of the tools and elements necessary to make Anthony's invention had long been readily available to the industry which was under great pressure to solve the problems. No change was necessary

in the dry-cell itself. However, no prior inventor had succeeded in applying a metal jacket to a dry-cell in a way to prevent swellage and leakage of electrolyte.

The District Court discusses at length the prior art, relied upon by petitioners, at pages 129-132 of the record, and concludes:

> "Various other delvers in the art discussed the problems with which we are concerned and made their suggestions. None of them, however, accomplished what Anthony did.
>
> "It is apparent, therefore, that when Anthony conceived the idea of placing the cell within a metal container insulated from the cell for the purpose of preventing leakage and swelling, he did something that nobody else had exactly done or taught. Nobody else had solved the problem satisfactorily or suggested the solution which he supplied.
>
> "What did Anthony do? He added to the conventional dry cell a strong outer metal container to prevent swelling and leaking, insulated it from the zinc container and sealed the end closures in such manner as to achieve practical prevention of leakage and swelling. He learned from the prior art that metal containers could be used to water proof dry cells. He learned that certain patentees had employed outer containers of insulating and water proofing character. He did not learn from any of them that, by surrounding the zinc cup with an insulated metal container with proper closures, leakage and swelling, to all appreciable extents, could be eradicated. No one of the prior patents contained any such teaching, nor did any of the prior uses offered in evidence disclose any such suggestion. This was his idea, a new and useful one satisfying a long felt want, followed by commercial success."

That the Claims in Suit Were Treated as Generic by the Patent Office Is Clear from the File Wrapper.

In view of the clear language of the claims in suit and the entire lack of any limiting prior art, it should not be necessary to consider the file wrapper. The second Anthony patent No. 2,243,938 (R. 234) is not in suit but covers, narrowly, the specific top closure used by Ray-O-Vac. The application was co-pending with that of the patent in suit and some of the narrower claims in the first application were transferred to it but later were cancelled out because the Patent Office properly held those claims did not disclose *invention* over the finally allowed generic claims in the parent case. These generic claims are now in suit. A "generic" claim, of course, is one which reads on several modified forms (see Sheet II of Appendix).

Actually there is no technical defense of file wrapper estoppel available to petitioner. Respondent offered the two file wrappers as Plaintiff's Exhibits 7 and 9 because a careful study of them shows conclusively that the claims in suit were in the original application when filed, were treated as generic to all of the disclosures in the original Anthony application, and were narrowed slightly to their present form.

Petitioners say on pages 36 and 37, in bold face type: "the claims relied upon in this suit were inserted into the first Anthony application by amendment dated July 11, 1939" and that "Here Anthony sought to broaden the claims to cover the cell disclosed in the second patent." This is a gross misstatement, and to clarify the contrary true facts a careful study of the file wrapper is necessary.

For the Court's convenience, we submit the following analysis to show conclusively the generic scope of the claims in suit and that they were never broadened.

When the application was filed for Anthony Patent No.

2,198,423, see file wrapper Plaintiff's Exhibit 7, original claims 1 to 4 were presented and treated by the Patent Office as generic to the three forms appearing in the patent. Also presented were original claims 5 to 8 which were specific to the form shown in Figure 1; claim 10 specific to the form shown in Figure 8; and claims 13 and 14 specific to the form shown in Figure 11.

Under Rule 41 in the Patent Office, an applicant may not claim more than one species of the invention unless the application also includes an *allowable* claim generic to all claimed species, that is, a claim which the Examiner then agrees as allowable. Accordingly, in the action dated October 8, 1938, the Examiner, after rejecting the generic claims, required election of a single species and stated on page 17:

> "Should applicant insist upon the patentability of any generic claims *either in their present* or amended form, the response in order to be complete must include an election of the species it is desired to retain *in the event no generic claim is finally found to be allowable.*" (Italics ours.)

In the meantime, Anthony had developed an improved top closure and it was decided to file a "continuation-in-part" application, putting into it the claims specific to Figure 1 of the original case. That application was filed March 3, 1939 and later matured into Patent No. 2,243,938 (R. 234), Plaintiff's Exhibit 8. See also file wrapper of this patent, Plaintiff's Exhibit 9.

Subsequently, on March 20, 1939, an amendment was filed in the original application insisting upon allowance of the generic claims, and pointing out that claims 5-8 had been cancelled *without prejudice*, were now in the new application, and stating on page 19, in accordance with Rule 41:

> "*In the event that no generic claims* are found al-

lowable, applicant elects to prosecute in the present application claims drawn to the species disclosed in Figure 11." (Italics ours.)

In the next action by the Patent Office May 20, 1939, no claims were allowed but after an interview with the Examiner, an amendment was filed July 14, 1939 wherein the original generic claims 1 to 4 were rewritten and renumbered as claims 15-17. (The same claims were later renumbered by the Patent Office, when the whole application was allowed, as claims 1, 2 and 3 in suit.) In this amendment (page 29 of the file wrapper) it was pointed out that as the generic claims were allowable applicant could claim more than one species.

In the next action by the Patent Office, the claims in suit were held to be allowable, and after a slight formal amendment to the species claims, the case was passed to issue.

Rule 42 of the Patent Office (Rec. 69) states:

"If the several inventions claimed in a single application be of such a nature that a single patent may not be issued to cover them, the inventor will be required to limit the description, drawing, and claim of the pending application to whichever invention he may elect * * *."

We call attention to this rule as further conclusive evidence that the Patent Office considered claims 1, 2, and 3 in suit as generic to Figures 1, 8, and 11. Otherwise, it was mandatory for the Examiner to require the applicant to erase Figures 1-10 of the drawings, limit the description to the form shown in Figure 11, and to have required the claims appearing as 4 and 5 in the patent to have been presented in the separate application. This was not done.

In the other file wrapper, Plaintiff's Exhibit 9, the Patent Office rejected the narrower claims transferred from the parent application as *unpatentable over allowed claims* 15-17 in the parent case which are now renumbered as

claims 1, 2, and 3 in suit (see page 17 of that file wrapper, Plaintiff's Exhibit 9). Obviously this demonstrates the generic scope of the allowed claims. It is also clear from sheet II of the Appendix hereto.

A study of the file wrapper, Plaintiff's Exhibit 7, will show that claim 1 in suit was the original broader claim 1 in the application. It will be noted at once that the original language is very similar to that of its final form, the principal difference being in that it did not specify originally that the sheet metal sheath is *insulated from both electrodes* and *tightly* embraces the closures.

For the Court's convenience the following shows claim 1 in suit, as found in the application when filed May 31, 1938, with all of the amendments in italics.

> 1. A leak-immunized *flashlight* dry-cell provided with circuit terminals at opposite ends, comprising; a hollow *cylindrical zinc* metal electrode containing electrolyte; a *centrally disposed* carbon electrode and depolarizing-mix in said electrolyte; a bottom closure for the cell affording a terminal for one of the electrodes; a top closure for the cell ~~*affording*~~ *provided with* a terminal for the other electrode, *electrically insulated from the first mentioned terminal;* and a protecting sheet-metal sheath *insulated from both of said electrodes and* enclosing the side walls of said metal electrode and *tightly* embracing said closures so as to prevent leakage of the electrolyte from the unit.

Petitioners cannot point out in the file wrapper any argument or indication that claim 1 is of narrower scope than that now contended for. Actually, the claim was narrowed slightly during prosecution to its present form.

The fact that claims specific to the form shown in Figure 1 were transferred to the continuation application is wholly immaterial as to the scope of the generic claims

left. In the continuation case those specific claims were rejected as being *unpatentable over the claims in suit* (see action dated June 1, 1940, in the file wrapper, Plaintiff's Exhibit 9) and were cancelled as unnecessary from that case "without prejudice."

As pointed out by Mr. Justice Stone in *Smith* v. *Snow*, 294 U. S. 1, 16:

> "It is of no moment that in the course of the proceedings in the Patent Office, the rejection of narrow claims was followed by the allowance of the broader claim 1."

In the present case the narrow claim was cancelled out of the second application "without prejudice," only after allowance of the broader claims of the patent in suit.

The District Court pointed out in its opinion (Rec. 135) that the defense of file wrapper estoppel must fail and Findings of Fact No. 16 and 17 (R. 138) sum up the matter succinctly.

Findings of Fact.

Practically all of the factual issues are covered by the findings of fact in the District Court (R. 136-138). Petitioners do not attack any particular finding nor deny that the findings are amply supported by the record, but on page 42 of their brief apparently ask this Court to nullify Rule 52 of the Rules of Civil Procedure and have "a full review" the findings below.

All of the findings of the District Court were sustained by the Court of Appeals which said that the issue of patentable invention "was in part a strictly factual one" (R. 248). Rule 58 (a) states: "Findings of Fact shall not be set aside unless clearly erroneous and due regard shall be given to the opportunity of the trial court to judge the credibility of the witness". This rule merely puts into words what has long been the rule of this Court.

Mr. Justice Holmes said in *Adamson* v. *Gilliland*, 242 U. S. 350, 353:

> "Considering that a patent has been granted to the plaintiff, the case is preeminently one for the application of the practical rule that so far as the finding of the master or judge who saw the witnesses 'depends upon conflicting testimony or upon the credibility of witnesses, or so far as there is any testimony consistent with the finding, it must be treated as unassailable'. *Davis* v. *Schwartz*, 155 U. S. 631, 636, 39 L. Ed. 289, 291, 15 Sup. Ct. Rep. 237."

See also:

Williams Mfg. Co. v. *United Shoe Mach. Corp.*, 316 U. S. 364, 367;

Charleston, South Carolina Mining & Mfg. Co. v. *United States*, 273 U. S. 220, 223; and

Contl. Paper Bag Co. v. *Eastern Paper Bag Co.*, 210 U. S. 406, 416.

CONCLUSION.

The Anthony invention has provided the battery art with a dry cell construction which solves fundamental problems that have plagued the flash light industry since its inception. The leak-proof cell satisfies an admitted long felt want and its enthusiastic acceptance by the public is shown by large sales at a sharply accelerating rate. History proves that the invention was not obvious.

In addition to conserving and protecting valuable equipment from losses through leakage and swelling, the cell has a markedly improved "shelf life." Reliable tests show that it will out-perform contemporary cells which use larger quantities of zinc and electrolyte of the same formula. These unexpected additional advantages are further evidence of invention.

Probably no other single invention, made during the last half century in the flash light battery industry, has contributed as much to the advancement of the art as the invention described and claimed in the patent in suit.

The patent is valid and has clearly and deliberately been infringed by the accused dry cells. The carefully considered judgment of the District Court, affirmed by the Circuit Court of Appeals for the Seventh Circuit, should be sustained.

Respectfully submitted,

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January 4, 1944.

APPENDIX.

THE AMERICAN PATENT SYSTEM.

REPORT OF THE NATIONAL PATENT PLANNING COMMISSION
JUNE, 1943.

I. Introduction.

In accordance with Executive Order No. 8977 of December 12, 1941, the National Patent Planning Commission has been engaged in a study of the American patent system and its operation.

The American patent system established by the Constitution giving Congress the "power to promote the progress of science and useful arts", is over 150 years old. The system has accomplished all that the framers of the Constitution intended. It is the only provision of the government for the promotion of invention and discovery and is the basis upon which our entire industrial civilization rests.

The American people and their government should recognize the fundamental rightness and fairness of protecting the creations of its inventors by the patent grant. The basic principles of the present system should be preserved. The system has contributed to the growth and greatness of our nation; it has:

(1) encouraged and rewarded inventiveness and creativeness, producing new products and processes which have placed the United States far ahead of other countries in the field of scientific and technological endeavor;

(2) stimulated American inventors to originate a major portion of the important industrial and basic inventions of the past 150 years;

(3) facilitated the rapid development and general application of new discoveries in the United States to an extent exceeding that of any other country;

(4) contributed to the achievement of the highest standard of living that any nation has ever enjoyed;

(5) stimulated creation and development of products and processes necessary to arm the nation and to wage successful war;

(6) contributed to the improvement of the public health and the public safety; and

(7) operated to protect the individual and small business concerns during the formative period of a new enterprise.

The strongest industrial nations have the most effective patent systems and, after a careful study, the Commission has reached the conclusion that the American system is the best in the world. However, as with any system of long standing, conditions arise which were not foreseen at the time of its establishment. The American patent system should be adjusted to meet existing conditions without destroying its basic principles.

II. Patents and the War Effort.

Specific inquiries addressed particularly to representatives of the War and Navy Departments failed to develop any serious instances in which the patent system has interfered with the prosecution of the present war. The outcome of this war, more than any previous war, will depend upon continuous superiority in science and invention. Never before has there been such a free exchange of scientific and technological knowledge and products of invention between our industrial concerns, our research laboratories and our own government, and between our government and our allies. Such a liberal and complete exchange of scientific information and the secrets of industrial laboratories could not have been possible without the reassurance of the protection afforded by the patent system. The American people should recognize the part the

system is thus playing in the free exchange of scientific information which is proving so effective in the prosecution of the war and which is so essential to ultimate victory.

Existing laws permit the government of the United States and its contractors and sub-contractors to manufacture and use any invention, patented or unpatented, regardless of the citizenship of the owner, upon the payment of reasonable compensation. These laws operate both in peace and in war. After consulting with the several government departments, including the War and the Navy, and affording them an opportunity for the presentation of evidence, the Commission is convinced that the existing laws are adequate to protect the government during the present national crisis.

V. Uniform Standard of Invention.

A. Declaration of National Policy.

The most serious weakness in the present patent system is the lack of a uniform test or standard for determining whether the particular contribution of an inventor merits the award of the patent grant. The patent statute itself is quite specific. R. S. 4886 provides that a patent may be obtained by "any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, * * * upon payment of the fees required by law and other due proceedings had." The difficulty in applying this statute arises out of the presence of the words "invented" and "discovered." Novelty alone is not sufficient, nor is utility, nor is the final accomplishment. There must also be present some mysterious ingredient connoted in the term "invented."

Many different and unrelated tribunals now are forced to make their individual decisions, among them being the Patent Office, the several district courts, the various courts of appeals and the Supreme Court. The difficulty is that there is no accepted uniform standard among these several tribunals which can be applied in the same or similar cases.

There is an ever widening gulf between the decisions of the Patent Office in granting patents and decisions of the courts who pass upon their validity. It would be highly desirable and a great step forward if patents could be issued with a greater assurance that their validity would be upheld by the courts. No other feature of our law is more destructive to the purpose of the patent system than this existing uncertainty as to the validity of a patent. The admonition is frequently heard that there should be "fewer and better patents", an impossible accomplishment so long as the present divergence of standards between the Patent Office and the courts and the several courts themselves obtains. Whether the standards of the Patent Office is too low or that of the courts is too high is not for us to determine. There should be a uniformity in the grant and treatment of patents. The present confusion threatens the usefulness of the whole patent system and calls for an immediate and effective remedy.

It is inconsistent with sound national policy to continue to grant patents with existing uncertainty as to their validity, and unfair to the inventors of this country and to manufacturers and inventors who have proceeded on the basis of a protective security in the form of a patent issued to them by the Federal Government. The Commission feels that not one but several steps should be taken to remedy the present situation. A promising improvement would be for Congress, by legislative enactment, to lay down a reasonable, understandable test by which inventions shall be judged both from the standpoint of the grant of the patent and the validity of the patent thereafter.

The Commission therefore recommends the enactment of a declaration of policy that patentability shall be determined objectively by the nature of the contribution to the advancement of the art, and not subjectively by the nature of the process by which the invention may have been accomplished.

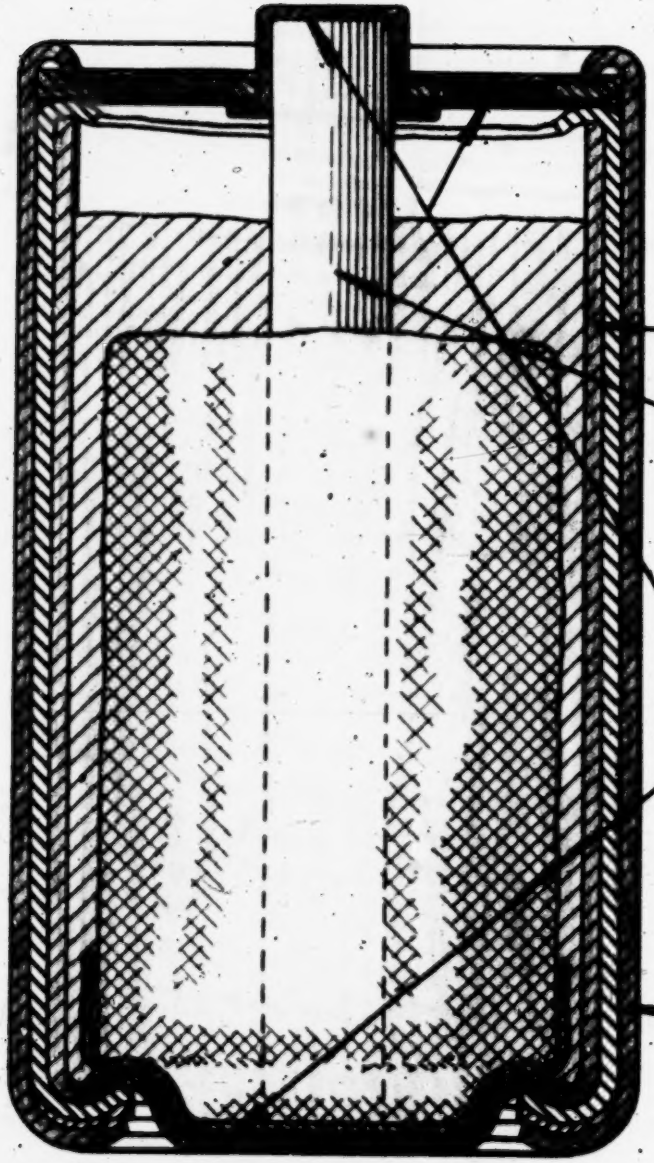


FIG. 1.

PAT.NO. 2,198,423 (REC. 160)

I claim:

1. A leak-immunized flash light dry-cell provided with circuit terminals at opposite ends, comprising:

a hollow cylindrical zinc metal electrode containing electrolyte;

a centrally disposed carbon electrode and depolarizing-mix in said electrolyte;

a bottom closure for the cell affording a terminal for one of the electrodes;

a top closure for the cell provided with a terminal for the other electrode, electrically insulated from the first mentioned terminal;

and a protecting sheet-metal sheath insulated from both of said electrodes and enclosing the side walls of said metal electrode and tightly embracing said closures so as to prevent leakage of the electrolyte from the unit.

I claim:

1. A leak-immunized flash light dry-cell provided with circuit terminals at opposite ends, comprising:

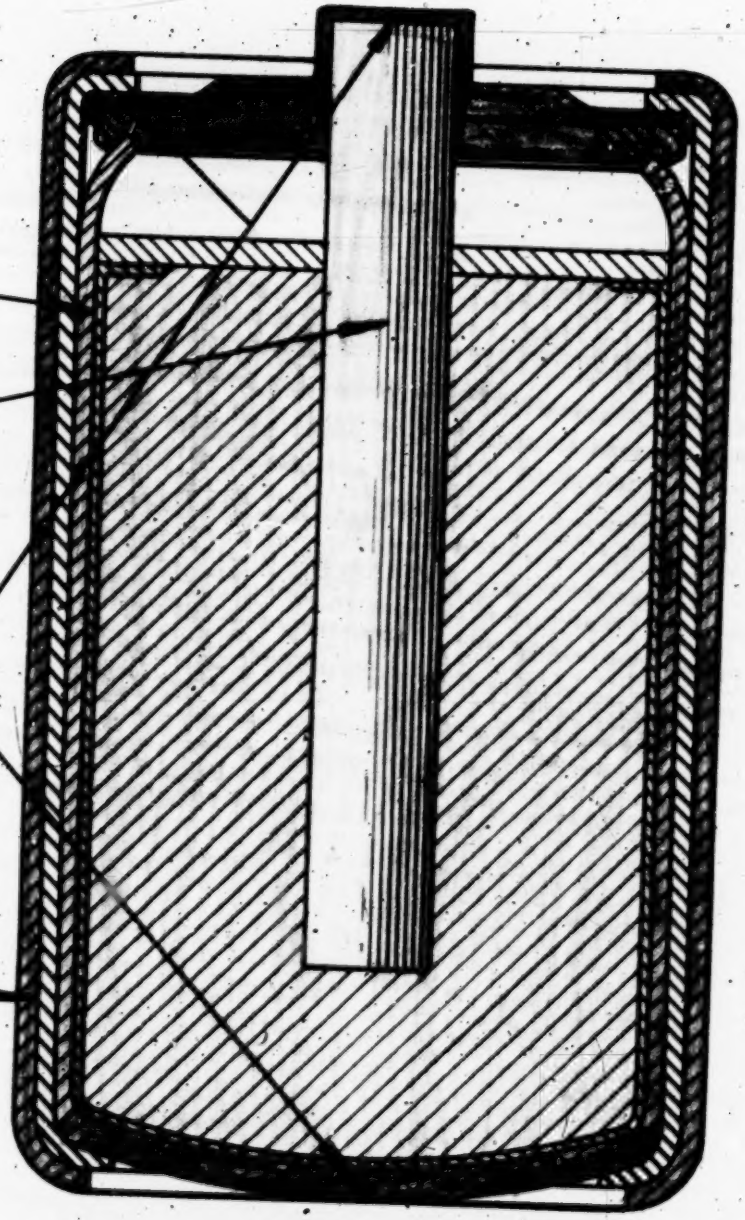
a hollow cylindrical zinc metal electrode containing electrolyte;

a centrally disposed carbon electrode and depolarizing-mix in said electrolyte;

a bottom closure for the cell affording a terminal for one of the electrodes;

a top closure for the cell provided with a terminal for the other electrode, electrically insulated from the first mentioned terminal;

and a protecting sheet-metal sheath insulated from both of said electrodes and enclosing the side walls of said metal electrode and tightly embracing said closures so as to prevent leakage of the electrolyte from the unit.



INFRINGING DRY CELL

FIG.1.
PAT.NO.2,198,425

I claim:

1. A leak-immunized flash light dry-cell provided with circuit terminals at opposite ends, comprising:

a hollow cylindrical zinc metal electrode containing electrolyte;

a centrally disposed carbon electrode and depolarizing-mix in said electrolyte;

a bottom closure for the cell affording a terminal for one of the electrodes;

a top closure for the cell provided with a terminal for the other electrode, electrically insulated from the first mentioned terminal;

and a protecting sheet-metal sheath insulated from both of said electrodes and enclosing the side walls of said metal electrode and tightly embracing said closures so as to prevent leakage of the electrolyte from the unit.

FIG.11.
PAT.NO.2,198,425

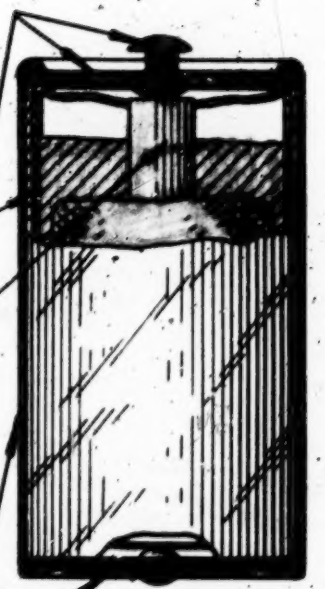
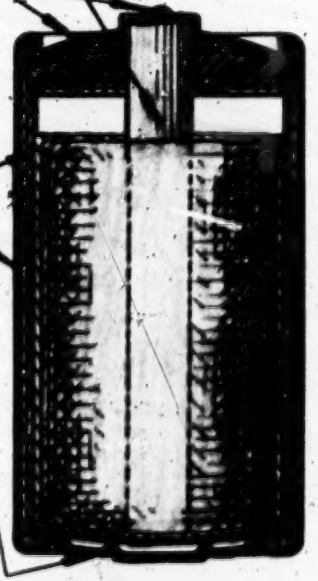


FIG.8.
PAT.NO.2,198,425



RAY-O-VAC
COMMERCIAL CELL